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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,883	08/20/2001	Shivendra Kumar Goyal	NOVA 9227	6770

7590

01/29/2004

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EXAMINER

CHOI, LING SIU

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/932,883

Applicant(s)

Goyal et al.

Examiner

Ling-Siu Choi

Art Unit

1713



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

1. claims 1-58 are now pending, wherein claims 1 and 30 are independent.

Claim Objections

2. Claims 17, 21, 25, 27, 50, 51, 53, 54, 56, and 57 are objected to because of the following informalities: claim 17, 21, 25, 27, 50, 51, 53, 54, 56, and 57, line 2, there are no base to cite the weight %:

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. **The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Berardi et al. (EP 0 595 574 B1).

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The present invention relates to

improvement	controlling the feed of a aluminum-containing cocatalyst to the reactor to provide 10-50 ppm of aluminum from the cocatalyst based on the polymer production rate
	maintaining the molar ratio of total Al (catalyst + cocatalyst) / Ti from a supported Ziegler-Natta catalyst ≥ 25
in a gas phase polymerization of ethylene and 0-20 weight % of one or more comonomers in the presence of the catalyst comprising the cocatalyst selected from the group consisting of tri-C ₂₋₆ alkyl aluminum, alkyl aluminum halide and mixtures thereof.	

(summary of claim 1)

Berardi et al. disclose a gas phase process to prepare a polyolefin in the presence of a supported Ziegler-Natta catalyst comprising a granular support, an organosilicon compound, a dialkylmagnesium, a trialkylaluminum compound, a monochloro organic compound, and a tetravalent titanium compound, wherein the trialkylaluminum is preferred to be triethylaluminum or triisobutylaluminum; the olefin can be 1-butene, 1-hexene, or 4-methyl-1-pentene (col. 5, lines 27-31; col. 6, lines 41-44 and 53-55; claims 1 and 7-8). Attention is drawn to Example 12 (b), wherein "35 millimols of trimethylaluminum and a quantity of catalyst prepared previously, coresponding to 0.33 millimols of titanium, were introduced into the reactor" (col. 15, lines 3-5). Accordingly, $Al / Ti = 35 / 0.33 = 106$. However, Example 12 did not provide any information related to the polymer production rate. Thus, the amount of Al based on the polymer production rate in term of ppm can not be calculated. In Example 13, Berardi et al. showed that

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"triethylaluminum , at a rate of 24 millimols per hour, were then introduced into this reactor.....a copolymer powder was obtained at a rate of 16 kg/h" (col. 15, lines 55-58; col. 16, lines 1-2), which results in the amount of aluminum based on the polymer production rate being 40.5 ppm. Since both Examples 12 and 13 are used to demonstrate the different aspects of the same invention, these calculated results will reflect the invention for the same Example. Thus, the present claims are anticipated by the disclosure of Berardi et al..

Claim Rejections - 35 USC § 103

5. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 30-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berardi et al. (EP 0 595 574 B1).

The disclosure of Berardi et al. is adequately set forth in paragraph 4 and is incorporated herein by reference.

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The difference between the present claims and the disclosure of Berardi et al. is the requirement of the ratio of Al (catalyst and co-catalyst) /Ti (catalyst) being in the range from 25-80.

The case law held that "a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties." **Titanium Metals Corp. of America v. Banner**, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce the amount of aluminum with respect to the amount of titanium in the disclosure of Berardi et al. because of reduction in the contamination of the resulting polymer and thereby obtain the present invention.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is (703)305-0887.

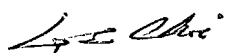
If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on (703)308-2450.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703)308-2351.

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A handwritten signature in cursive script, appearing to read "Ling-Siu Choi".

Ling-Siu Choi

January 22, 2004